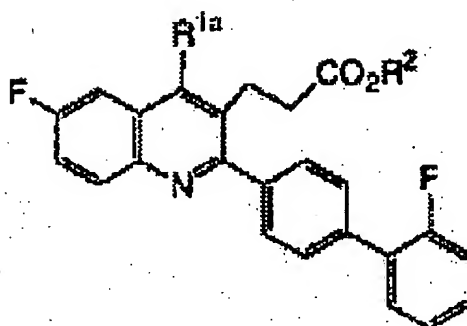
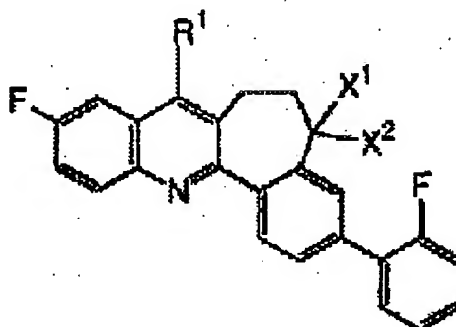


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**Search scope:** US Granted US Applications EP-A EP-B WO JP (bibliographic data only)  
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**JP10231289 A**  
**TETRACYCLIC QUINOLINE DERIVATIVE**  
KYOWA HAKKO KOGYO CO LTD

**Abstract:**

**PROBLEM TO BE SOLVED:** To obtain the subject derivative useful as an immunosuppressant, etc., having an immunosuppressive activity and consisting of a specific tetracyclic quinoline derivative obtained by reacting 5-fluoroisatin with 2-fluorophenylbenzoylbutyrate. **SOLUTION:** This compound is a new tetracyclic quinoline derivative expressed by formula I {R<sup>1</sup> is COOH, CHO, COY [Y is NR<sup>3</sup>R<sup>4</sup> (R<sup>3</sup> and R<sup>4</sup> are each H, a 1-18C alkyl, an aryl, a substituted aryl, or a heterocycle produced by combining R<sup>3</sup> and R<sup>4</sup> together with their adjacent nitrogen atom), OR<sup>5</sup> (R<sup>5</sup> is a 1-4C alkyl, etc.) or CH<sub>2</sub>Z (Z is a halogen or OH), X<sup>1</sup> is H or OH; X<sup>2</sup> is H; or X<sup>1</sup> and X<sup>2</sup> express an oxygen atom together with each other; however, when R<sup>1</sup> is COOH, X<sup>2</sup> and X<sup>1</sup> must not be H at the same time.} and useful as an immunosuppressant, etc. This compound is obtained by subjecting a quinoline derivative expressed by formula II (R<sup>1a</sup> is CONR<sup>3</sup>R<sup>4</sup> or CH<sub>2</sub>Z; R<sup>2</sup> is H, a 1-4C alkyl or (substituted) aralkyl] to Friedel-Crafts reaction.

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A61K03147

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**Patents Citing This One (1):**

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DIHYDROOROTATE DEHYDROGENASE INHIBITORS  
FOR THE TREATMENT OF VIRAL-MEDIATED DISEASES



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